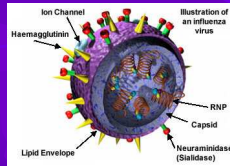
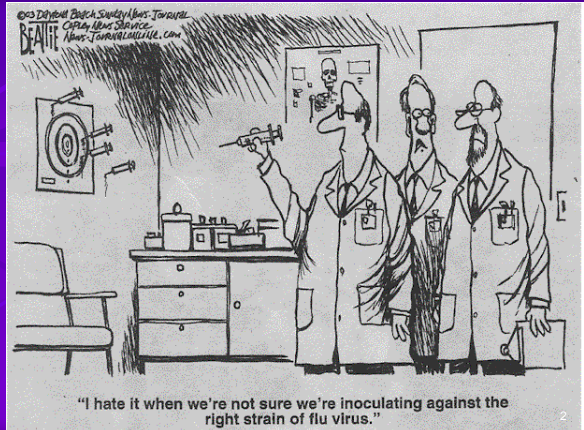


2013 – 2014 Influenza Inservice



1



2

Biology of Influenza

Divided into 2 types that spread human disease

- Influenza A
 - H1N1
 - H3N2
- Influenza B
 - New Quadrivalent vaccines have 2 Influenza B like antigens

3

Influenza Immunity

- Seasonal epidemics are the result of antigenic drift
- Flu vaccine is reevaluated every year to address antigenic drift.
- When antigenic shift occurs a new subtype of influenza A appears and can cause a pandemic (Novel H1N1) because there are no pre-existing antibodies.

4

Influenza Spread

- Spread by contact with an infected person through:
 - Sneezing
 - Coughing
 - Touching items recently contaminated by a person with the flu virus

5

Transmission

- Droplet (coughing, sneezing)
- Contact
 - Direct touching of contaminated surfaces
 - Virus may persist 2 – 8 hr on surfaces
- Patients contagious from 1 day before to ≥7 days after onset



6

Prevention

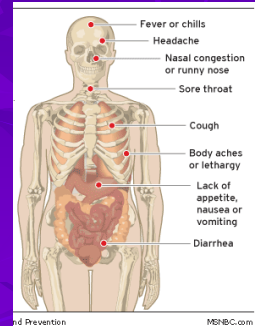
- Clean hands frequently
- Avoid touching eyes, nose, mouth
- Try to avoid close contact with sick people
- Get vaccinated



7

Symptoms

- Fever (typically ≥ 100 F)
- Cough (usually nonproductive)
- Headache, body aches
- Severe fatigue
- Runny nose
- Sore throat
- May have diarrhea, nausea, vomiting



and Prevention MBPBC.com

8

2012 – 2013 Influenza Treatment Recommendations

Influenza is susceptible to the antivirals oseltamivir (Tamiflu®) and zanamivir (Relenza®)

Start antivirals ASAP for:

- Hospitalized patients.
- High-risk populations for seasonal influenza complications
 - Children < 2 years
 - Adults > 65 years
 - Persons with chronic diseases
 - Persons with immunosuppression.
 - Women who are pregnant or postpartum
 - American Indians/Alaska Natives
 - Persons who are morbidly obese
 - Residents of chronic care facilities
 - Patients with confirmed or suspected influenza who have severe, complicated or progressive illness or who require hospitalization

9

Influenza Antiviral Medicines: A Summary for Clinicians 2012-2013. Centers for Disease Control and Prevention, December 22, 2012.

Influenza Treatment (cont.)

- Antivirals: largest benefit if started within 48 hours of illness.
- Oseltamivir (Tamiflu®) can be used for all ages.
- Can be considered on the basis of clinical judgment for any patient if can be initiated within 48 hours of illness.
- Recommendations may change so clinicians should monitor local resistance data.

10

Seasonal Flu

- The seasonal flu usually occurs annually between December and March
- Every Year in the U.S. on the average
 - 200,000 Hospitalized (55,000 – 431,000)
 - 3,000 - 49,000 Deaths (Very Young, Old, Immune Compromised)
 - Most recover within 1 – 2 weeks

11

Seasonal Flu

- Global:
 - Millions infected
 - Between 250,000 to 500,000 deaths per year

12

Seasonal vs. Pandemic Flu

- Seasonal flu is predictable – Pandemic flu is not
- Pandemic flu is caused by a novel virus strain that humans have no resistance against
- Pandemic flu infects large numbers of people of different ages globally and can cause serious illness and deaths

13

Influenza Pandemics of the 20th Century



1918 "Spanish Flu"
20–40 Million Deaths
675,000 U.S.
A (H1N1)



1957 "Asian Flu"
1–4 Million Deaths
70,000 U.S.
A (H2N2)



1968 "Hong Kong Flu"
1–4 Million Deaths
34,000 U.S.
A (H3N2)

14

The most cost effective way to combat influenza is to prevent it by **immunization** and **good hygiene**.

15

Influenza Immunization Recommendation

- The CDC recommends vaccination of all persons aged ≥ 6 months of age
- Vaccination to prevent influenza is particularly important for persons who are at increased risk for severe complications from influenza, or at higher risk for influenza-related outpatient, emergency department, or hospital visits.

NOTE: If there is a vaccine shortage and/or late arrival of vaccine supplies (especially early in the flu season), it is appropriate to use contingency plans to vaccinate those persons with high-risk conditions rather than those who wish to reduce risk, or all persons 50 years of age or over until adequate vaccine supplies are available.

16

Newly Licensed Flu Vaccines

- Quadrivalent live attenuated influenza vaccine (LAIV4; Flumist® Quadrivalent [MedImmune])
- Quadrivalent inactivated influenza vaccine (IIV4; Fluarix® Quadrivalent [GlaxoSmithKline])
- Quadrivalent inactivated influenza vaccine (IIV4; Fluzone® Quadrivalent [Sanofi Pasteur]);
- Trivalent cell culture-based inactivated influenza vaccine (ccIIV3; Flucelvax® [Novartis]),
- Recombinant hemagglutinin (HA) vaccine (RIV3; FluBlok® [Protein Sciences]),

17

Note on Abbreviations

- IIV (Inactivated Influenza Vaccine, previously TIV).
 - IIV3 (trivalent)
 - IIV4 (quadrivalent)
- RIV (recombinant hemagglutinin influenza vaccine)
- LAIV

The above denote vaccine categories; numeric suffix specifies the number of antigens in the vaccine.

- Where necessary to refer specifically to cell culture-based vaccine, the prefix "cc" is used (e.g., "ccIIV3").

18

Inactivated Influenza Vaccine (IIV)

2013 - 2014 FORMULA :

- A/California/7/2009(H1N1) – like antigen;
- A/Victoria/361/2011(H3N2) – like antigen;
- B/Massachusetts/2/2012 – like antigen.
- B/Brisbane/60/2008-like antigen only in the new quadrivalent vaccines.

Per CDC Advisory Committee on Immunizations Practices (ACIP):

Within approved indications and recommendations, no preferential recommendation is made for any type or brand of licensed influenza vaccine over another.

19

Flu Shots vs. Flu Mist

Flu Shot Intramuscular

- Immunization into the muscle via needle
- Few contraindications
- Anyone ≥ 6 months

Flu Shot Intradermal

- Intradermal injection with needle inserted perpendicular to the skin in the deltoid area
- Ages 18 through 64
- Dose is 1/5 volume of IM immunization (and requires less antigen)
- Few contraindications
- More local side effects than intramuscular

Flu Mist

- Healthy persons
- Ages 2 – 49 years
- No pregnant women
- No history of wheezing
- No aspirin therapy
- No contact with severely immunocompromised people



20

Store and Handle Vaccines Properly

Improper vaccine handling and storage may cause it to:

- Lose potency, or
- Become contaminated.



21

Cold Chain

Vaccines must be stored properly from manufacturing to administration. This includes:

- Manufacturer to distributor,
- Distributor to office,
- Office to patient.



22

Vaccine Storage and Handling

- IIV, LAIV and PPSV23 should be refrigerated (35°– 46°) at all times.
- These vaccines cannot be frozen or exposed to freezing temperatures.



23

Tips for Preparing for a Mass Clinic

- Administer only one type of vaccine.
- Separate vaccine stations by vaccine type.
- Transport the vaccine to the clinic in the manufacturer-supplied packaging at the recommended temperature.
- Use an insulated barrier (such as bubble wrap) between the vaccine and the cold or frozen packs.
- A single layer of towel over ice is NOT adequate protection.

24

Research on Prefilling Syringes

- Increased risk for administration errors.
- Increased vaccine wastage.
- Risk of inappropriate vaccine storage conditions.
- Bacterial growth in vaccines that do not contain a preservative.
- Reduced vaccine potency.

25

Tips for Prefilling Syringes at a Mass Clinic

- Draw up <1 vial or 10 doses.
- Replenish supply throughout the day.
- Monitor patient flow to avoid drawing up unnecessary doses.
- Discard any syringes other than those filled by the manufacturer at the end of the clinic day.

26

Vaccine Administration Record

- VAR for clients
- VAR for DHSS staff

27

2013 – 2014 SHS Community Clinic Logistics

- All clinics this year are walk-in (no appointments)
 - DPH staff will be meeting with each venue prior to event.
 - Clients will arrive early.
 - Ideally clients will be separate from staging area until clinic is scheduled to open.
 - If large amount of clients in beginning may want to consider assigning numbers.
 - All staff will report one hour before clinic start time.

28

Community Clinic Staffing

- DPH greeter (may also serve as billing staff in smaller clinics)
 - Hand out VAR
 - Direct to table to complete VAR
 - Answer questions about VAR
 - Inform clients to have Medicare card ready
- Medicare billing staff (2 – 3 people)
 - Ensure VAR is complete, signed.
 - Completes Medicare billing sheet
 - Use Medicare card and completed VAR to fill out demographics.
 - Client must sign
- Screen children for VFC eligibility (On VAR)

29

Community Clinic Staffing (continued)

- Lead Nurse
 - Answers questions of staff.
 - Discusses clinic process with Instructors (Instructors to sign off on each VAR completed by students, Instructors and students need to have viewed this presentation).
 - Ensures DMRC volunteers have completed paperwork.
 - Ensures clinic runs smoothly.
 - All requests for additional or restock of supplies to be requested via lead nurse.
- Nurses (1 to 4) (at least 2 nurses are required at flu clinics).
 - Check VAR for contraindications for vaccine (Bring your 2013 Standing Orders)
 - Administer vaccine
 - **Complete** VAR and sign
 - Check for adverse effects

**ALL DPH STAFF WILL SET UP/BREAK DOWN
VACCINATION AREAS**

30

Packing Flu Clinic Supplies Support Staff

- Alcohol Pads
- Band-Aids
- Sharps Containers (1 for each nurse)
- Gloves
- Hand Sanitizer
- Gauze Pads
- Table Covers
- Calculator
- Receipt Book
- Stapler, Paper Clips, Rubber Bands
- Tissues
- Tape
- Donation Boxes
- Paperwork
 - VAR
 - VIS
 - Medicare Forms, Cash Report
 - Flu Binder
 - S.O.: Flu, Medical Emergency
 - Exposure Policy (DPH PM 27)
 - VAERS Form
 - Vaccine/syringe wasting form
- Pens
- Clip Boards
- Red Bags
- Numbers

31

Packing Flu Clinic Supplies Lead Nurse/& Immunization Staff

- Vaccine
- Syringes
- Emergency Box
- Oxygen
- AED
- Standing Orders
 - Flu
- Coolers

32

DMRC Release Form

33

Reports

Support staff is responsible for sending the following reports (clinic manager to designate responsible personnel)

Cash Report ([see Cash Accountability H.O.](#))

- 2 people to count donations @ site.
- 3rd person to transport donations back to clinic.
- Deposits will be made with a note of "Flu Clinic" and the name. Copy of Cash Accounting form and deposit slip scanned to Sue Kenton.

34

Reports Continued

- Statistics Report
 - One person at each unit will be designated to complete the statistics form.
 - Usually done immediately following a clinic (or the next morning for evening clinics)
 - Sent to Danielle Briggs/TBD by noon on Monday.
- Person responsible for reports emails all involved in clinic with the numbers.
- All immunizations administered must eventually be entered into Del Vax.

35

Frequently Asked Questions 2013 – 2014 Flu Season

36

Why Do I Need a Flu Shot?

- 200,000 (on average) Hospitalized (55,000 – 431,000)
- 3,000 - 49,000 Deaths (Very Young, Old, Immune Compromised)



37

Am I too young for a flu shot?



No – everyone age 6 months and up is recommended to receive the Influenza vaccine

38

What types of flu vaccine are available?



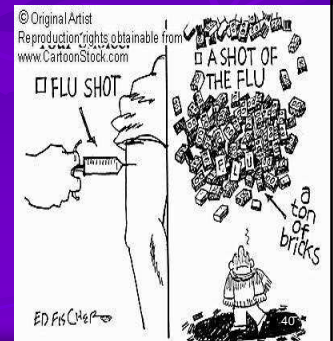
Image courtesy of Aviren

- IIV: "Flu Shot" (intramuscular or intradermal)
 - High Dose
 - Trivalent vs. quadrivalent (IIV3 vs. IIV4)
 - Recombinant (RIV)
- LAIV: - FluMist® (only quadrivalent)

39

Can I get the flu from the vaccine?

NO – The injectable vaccine does not contain any of the live virus so it is impossible to get the flu. LAIV is made from weakened virus and does not cause influenza. The vaccine can cause mild symptoms in some people. Although they can occur after vaccination, they may not have been caused by the vaccine.



What are the CDC vaccination recommendations?

All persons aged ≥ 6 months of age.

41

Who should not be vaccinated?

- People with severe allergies to eggs or other vaccine components.
- People who have had a severe allergic reaction to past influenza vaccination.
- Children younger than 6 months of age.

42

Why do I need to get vaccinated against the flu every year?

- After you get vaccinated your immunity declines over time and may be too low to provide protection after a year.
- Because the viruses mutate and become more or less prominent each year the vaccine is protecting you against different viruses.

43

What are the side effects from the flu shot?



- Soreness, redness, or swelling where the shot was given,
- Fever,
- Aches ,
- Life-threatening allergic reactions from vaccines are very rare. If they do occur, it is within a few minutes to a few hours after the shot.

44

What are the side effects from the FluMist®?

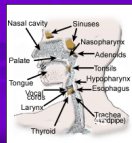
Children (2 – 17 ys)

- Runny nose or nasal congestion (44%) or cough
- Fever (7% children fever >100° F)
- Headaches and muscle aches
- Wheezing
- Abdominal pain or occasional vomiting or diarrhea

Adults (18 – 49 ys)

- Runny nose or nasal congestion (32%)
- Sore throat (reported by 19% of adults)
- Cough, chills, tiredness/weakness
- Headache

A severe allergic reaction could occur after any vaccine (estimated at <1 in a million doses).



46

Will pneumonia vaccine be offered at community flu clinics?

- Pneumonia vaccine will only be available at the DPH Immunization clinics at State Service Centers.
- Pneumonia vaccine can be given throughout the year (not seasonal), therefore can be administered during a routine doctor's visit.

46

Break Time



47

Influenza Standing Orders 2013

Inactivated Influenza Vaccine (IIV)

Live, Attenuated, Influenza Vaccine (LAIV)



48

Inactivated Influenza Vaccines

4 Preparations of Fluzone®

1 Preparation of Fluarix®

49

Inactivated Influenza Vaccines

- Fluzone® 5.0mL multidose with thimerosal (individuals ≥ 8 years)
- Fluzone® 0.25mL single dose thimerosal free (children 6 – 35 mos)



50

Inactivated Influenza Vaccines

- Fluzone® 0.5 mL single dose thimerosal free prefilled syringe (prioritize for children 3 years to < 8 years and pregnant women)
- Fluzone® 0.5 mL single dose thimerosal free vials (prioritize for children 3 years to < 8 years and pregnant women)



51

Inactivated Influenza Vaccines

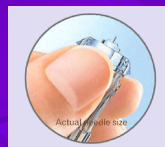
- Fluarix® 0.5mL vial or 0.5mL prefilled syringe thimerosal free (individuals ≥ 3 years)



52

Inactivated Influenza Vaccines

- Fluzone® 0.1 mL syringe single dose for intradermal use (individuals from 18 years through 64 years)



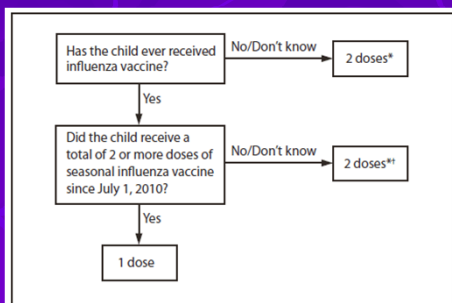
53

Inactivated Influenza Vaccine Dosage

AGE GROUP	DOSE	NUMBER of DOSES	ROUTE
6 – 35 months	0.25 mL	1 or 2	IM
3 – 8 years	0.5 mL	1 or 2	IM
≥ 9 years	0.5 mL	1	IM

54

Second Dose for Children



55

Number of Doses and Intervals

- Children 6 months through 8 years of age who receive a seasonal influenza vaccine for the first time should receive 2 doses, spaced ≥ 4 weeks apart.
- Children 6 months through 8 years of age who received at least 2 seasonal influenza vaccines during any previous season, and at least 1 dose of a 2009(H1N1)-containing vaccine (i.e., either 2010–11, 2011–12 or 2012–2013 seasonal vaccine or the monovalent 2009[H1N1] vaccine), then the child needs only 1 dose for 2013–14.
- Children 6 months through 8 years of age need only 1 dose of vaccine in 2013–14 if they have received any of the following:
 - 2 or more doses of seasonal influenza vaccine since July 1, 2010;
 - 2 or more doses of seasonal influenza vaccine before July 1, 2010, and 1 or more doses of monovalent 2009(H1N1) vaccine;
 - 1 or more doses of seasonal influenza vaccine before July 1, 2010, and 1 or more doses of seasonal influenza vaccine since July 1, 2010

56

Preferred Site for IIV IM and Intradermal

- The recommended site of IM flu vaccination for is the deltoid muscle for adults and older children.
- The preferred site for IM vaccination in infants and young children is the antero-lateral aspect of the thigh.
- The preferred site for intradermal vaccination is the deltoid region.

57

Indications

- All persons aged ≥ 6 months should be vaccinated annually to protect from influenza infection and the complications that may follow.

NOTE: If there is a vaccine shortage and/or late arrival of vaccine supplies (especially early in the flu season), it is appropriate to use contingency plans to vaccinate those persons with high-risk conditions rather than those who wish to reduce risk, or all persons 50 years of age or over until adequate vaccine supplies are available.

58

Inactivated Influenza Vaccines Contraindications and Precautions

- | | |
|--|--|
| <ul style="list-style-type: none"> Contraindications <ul style="list-style-type: none"> Severe allergic reaction to any component of the vaccine, including egg protein. Severe allergic reaction after previous dose of influenza vaccine. | <ul style="list-style-type: none"> Precautions <ul style="list-style-type: none"> Moderate or severe acute illness with or without fever (note this is not a contraindication). Guillain-Barré syndrome within 6 weeks following a previous dose. |
|--|--|

If anyone indicates a hypersensitivity or allergy to eggs or history of Guillain-Barré refer them to their PCP.



Inactivated Influenza Vaccines Possible Reactions

- Soreness ($>50\%$), redness and/or swelling at the vaccination site are the most frequent side effects of vaccination.
- Headache, lethargy, sore throat, red itchy eyes, cough, fever and muscle aches (last 1-2 days.)
- Severe problems include immediate responses such as hives, angioedema, allergic asthma, or systemic anaphylaxis (severe allergic reaction estimated at less than 1 in a million doses.)

60

IIV Intradermal

Indications, Contraindications, Precautions

- Approved for persons 18 through 64 years of age.
- Contraindications and Precautions are the same as IIV (IM)



61

IIV Intradermal Possible Reactions

- The most common injection-site reactions were erythema, induration, swelling, pain, and pruritus; Erythema, induration, swelling and pruritus occurred more frequently following Fluzone Intradermal than Fluzone IIV (IM).
- The most common solicited systemic adverse events were headache, myalgia and malaise.
- These symptoms usually go away within 3 to 7 days.

62

Live, Attenuated, Influenza Vaccine (LAIV)

- FluMist™ 0.2mL spray single dose (Age ≥2 but <50)
 - For Healthy People Only
 - Not for pregnant women
 - Not for use in children 2- 4 who have asthma or wheezing. Parents should be asked: "In the past 12 months, has a healthcare provider ever told you that your child had wheezing or asthma?"



63

Live, Attenuated, Influenza Vaccine (LAIV) Second Dose for Children

Same as IIV



64

Live, Attenuated, Influenza Vaccine (LAIV) Preferred Site

- For nasal use only.
- Approximately half of the total sprayer contents is sprayed into the first nostril while the recipient is in the upright position. An attached dose-divider clip is removed from the sprayer to administer the second half of the dose into the other nostril. If the vaccine recipient sneezes after administration, the dose should not be repeated.

65

Live, Attenuated, Influenza Vaccine (LAIV) Indications

Well individuals 2 through 49 years of age to protect from influenza infection and the compromising sequelae that may follow.

Note: If there is a vaccine shortage and/or late arrival of vaccine supplies (especially early in the flu season), it is appropriate to use contingency plans to vaccinate those persons with higher risk (i.e. children).

66

Live, Attenuated, Influenza Vaccine (LAIV) Contraindications

- Individuals aged <2 years or ≥50 years.
- Pregnant Women
- Individuals with a history of hypersensitivity, including anaphylaxis, to any of the components of LAIV including egg protein, gentamicin, gelatin, and arginine, or after a previous dose of any influenza vaccine. Individuals with chronic pulmonary disease (including asthma), cardiovascular (except isolated hypertension), renal, hepatic, neurologic/neuromuscular, hematological or metabolic disorders (including diabetes mellitus).
- Children and adults who have immunosuppression (including immunosuppression caused by medications or by human immunodeficiency virus);
- Children or adolescents (6 months–18 years) receiving aspirin or other salicylates.
- Children aged 2 - 4 years whose parents or caregivers report that a healthcare provider has told them during the preceding 12 months that their child had wheezing or asthma, or whose medical record indicates a wheezing episode has occurred during the preceding 12 months.
- Close contacts of immunosuppressed persons requiring a protected environment (e.g. hematopoietic stem cell transplant recipient).

67

Live, Attenuated, Influenza Vaccine (LAIV) Precautions

- LAIV should not be administered until 48 hours after cessation of influenza antiviral therapy. Influenza antiviral medications should not be administered for 2 weeks after receipt of LAIV.
- Guillain-Barre Syndrome (GBS) within 6 weeks following a previous dose of influenza vaccine (should consult their PCP)
- Moderate or severe acute illness with or without fever.

68

Simultaneous Administration with Other Vaccines

If live injected vaccines (MMR, MMRV, varicella, and yellow fever) and live intranasal influenza vaccine (LAIV) are not administered at the same visit, they should be separated by at least 4 weeks.



69

Live, Attenuated, Influenza Vaccine (LAIV) Possible Reactions

- Children (2-17 years of age)
 - Runny nose or nasal congestion (44%) or cough
 - Fever (7% children fever >100° F)
 - Headaches and muscle aches
 - Wheezing
 - Abdominal pain or occasional vomiting or diarrhea
- Adults (18-49 years of age):
 - Runny nose or nasal congestion (32%)
 - Sore throat (reported by 19% of adults)
 - Cough, chills, tiredness/weakness
 - Headache
- A severe allergic reaction could occur after any vaccine (estimated at <1 in a million doses).

70

Who Can Administer LAIV

- Persons with underlying medical conditions placing them at high risk
- Pregnant Women
- Persons with Asthma
- Persons aged ≥ 50 years

Severely immunosuppressed persons should not administer LAIV (those requiring a protected environment).

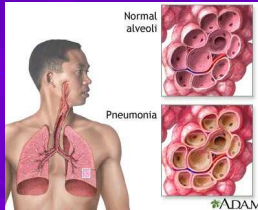
71

Thimerosal Legislation

- Vaccine containing mercury may not be given to children < 8 years or pregnant women.
- If there is a thimerosal free vaccine shortage the Director could apply for an exemption.
If an exemption is in place the pregnant client, or parent or guardian of a child < 8, must be informed that the vaccine contains mercury and must sign a consent form.

72

Pneumococcal Polysaccharide Vaccine (PPSV 23) Standing Orders



73

Pneumococcal Polysaccharide Vaccine

- Pneumovax®



74

PPSV 23 Indications

- All persons age 65 and older.
- Persons aged 2 – 64 that have:
 - chronic cardiovascular disease (including congestive heart failure and cardiomyopathy),
 - chronic pulmonary disease (including COPD, emphysema)
 - alcoholism or chronic liver disease (including cirrhosis),
 - diabetes mellitus,
 - cochlear implants.
 - a CSF leak
 - have functional or anatomic asplenia
 - environments that have identified increased risk
 - immunocompromising conditions (HIV infection, leukemia, lymphoma, Hodgkin's disease, multiple myeloma, generalized malignancy, chronic renal failure, or nephrotic syndrome, congenital or acquired immunodeficiencies, those receiving immunosuppressive therapy, and those who have received an organ or bone marrow transplant).

75

PPSV 23 Indications (cont.)

- Persons aged 19 – 64:
 - With asthma or who smoke cigarettes.
- Vaccinate persons ≥ 2 years deemed at risk by the Medical Director

76

PPSV23 Schedule

- All adults age 65 years and older should receive one dose. If previously vaccinated with PPSV23 prior to age 65 years use a minimum interval of 5 years before final dose.
- Persons <65 years who are immunocompetent that meet the indications for PPSV23 should receive 1 dose of PPSV23 between the ages of 2 - 64 years and 1 dose of PPSV23 at/after age 65 years.
- Persons with asplenia or who are immunocompromised should receive 2 doses of PPSV23 between the ages of 2 – 64 years and 1 dose of PPSV23 at/after age 65 years use a minimum interval of 5 years between doses.

77

PPSV Items to Note

- Recurrent URI infections including otitis media are not a basis for administration of Pneumococcal Polysaccharide Vaccine.
- CHILDREN 24–59 months of age who have already received one or more doses of Prevnar® and who are at high risk of invasive pneumococcal disease will benefit from the additional serotypes included in PPSV23. PPSV23 should be given no sooner than 2 months after the last dose of Prevnar®.

78

PPSV Contraindications, Precautions, and Possible Reactions

Contraindications

- Severe allergic reaction to vaccine component.
- Individual less than 2 years of age.

Precautions

- Moderate or severe acute illness with or without fever.

Possible Reactions

- Local reaction (erythema and induration) with or without tenderness.

79

LATEX Concerns

No Latex

- Fluzone® Vials
- Fluzone® Intradermal prefilled
- Fluzone® prefilled syringes
- FluMist®
- Pneumovax®
- VanishPoint® Syringes

May Contain Latex

- Fluarix® (syringe tips may contain latex)

80

Vaccine Information Sheets (VIS)

- Vaccine fact sheet
 - Lists normal and expected vaccination effects.
 - Includes unusual vaccine adverse reactions.
 - Available at the CDC Web site in multiple languages.
- Federal law requires giving* a VIS to the patient or parent of child before administering any vaccine on the recommended childhood vaccination schedule.
- vis-statements/flu.pdf
- vis-statements/flulive.pdf
- vis-statements/ppv.pdf

*client does not have to accept the VIS, but must be offered.

81

Screening Clients for Contraindications and Precautions

Contraindication

A patient condition that increases serious vaccine adverse reaction risk.
i.e.: Severe allergic reaction to any vaccine component or previous vaccine dose

Don't administer vaccine!

Precaution

A patient condition that might:

- Increase risk of adverse reaction.
- Compromise vaccines ability to produce immunity.

May administer if benefits outweigh risks

82

Invalid Contraindications to Vaccine

- Mild illness.
- Antimicrobial therapy.
- Disease exposure or convalescence.
- Pregnant or immunosuppressed person in household.
- Breastfeeding.
- Preterm birth.
- Allergies to items not present in vaccine or allergy that is not anaphylactic.
- Family history of adverse events.
- TB skin testing.
- Multiple vaccines.

83

Infection Control

- Hand Hygiene
 - Recommended between patients
 - Alcohol based waterless antiseptic can be used
- Gloves
 - Not required by OSHA unless
 - Potential for exposure to blood or body fluids
 - Open lesions on the hands or
 - Agency policy
 - If used must be changed in between each patient
 - Hands must be cleaned after removing gloves in between every patient.

84

Infection Control

Needle and Syringe Disposal

- Never detach or recap a used needle.
- Place in puncture proof container.
- Dispose of as infectious medical waste.
- Use safety needles whenever available to reduce the risk of injury.

85

the VANISHPOINT[®] ADVANTAGE
Designed for Clinician and Patient Safety

1 Use standard procedure for drawing up medication.

2 Prepare and give injection using aseptic technique according to institutional policy.

3 While the needle is still in the patient, fully depress the plunger to activate retraction.

4 Dispose of VanishPoint[®] syringe in an appropriate sharps container.

EASY, ONE-HANDED ACTIVATION

NO CONTAMINATED SHARP EXPOSED

Pre-removal activation prevents exposure to contaminated sharp.

86

Safety Needle For Use with Prefilled Syringe

Immediately after injection apply a single finger stroke to the Activation-Assist[™] lever arm to activate the shielding mechanism.



87

The Proper Vaccine Administration Technique

Proper technique is necessary to:

- Promote optimal antibody response
- Reduce risk of local adverse reactions

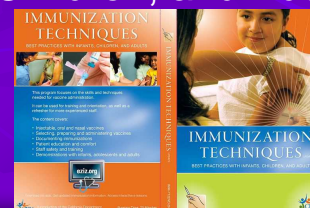
88

Routes of Vaccine Administration

- Trivalent Inactivated Influenza Vaccine (IIV): Intramuscular
- Trivalent Inactivated Influenza Vaccine(IIV) Intradermal: Intradermal
- Live Attenuated Influenza Vaccine (LAIV): Intranasal
- Pneumonia Polysaccharide Vaccine (PPSV23): Intramuscular or Subcutaneous

89

DVD: Immunization Techniques: Best Practices with Infants, Children, and Adults



90

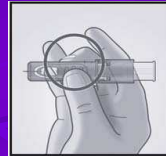
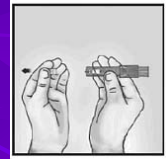
Drawing up Vaccine (multidose vials only)

- Agitate Vaccine (vaccine in prefilled syringes should also be shaken)
- Clean vaccine stopper with alcohol pad
- Draw up air amount equal to vaccine dose into syringe
- Inject air into vaccine through stopper
- Pull up appropriate dose
- Label multidose vial with date opened
- Document any wasted vaccine or syringes and report.

91

Intradermal

1. Remove the needle cap from the microinjection system.
2. Hold the system by placing the thumb and middle finger only on the finger pads, the index finger remains free. Do not place fingers on the windows.



92

Intradermal Continued

4. Insert the needle perpendicular to the skin, in the region of the deltoid, in a short, quick movement.
5. Once the needle has been inserted, maintain light pressure on the surface of the skin and inject using the index finger to push on the plunger. Do not aspirate.



93

Intradermal Continued

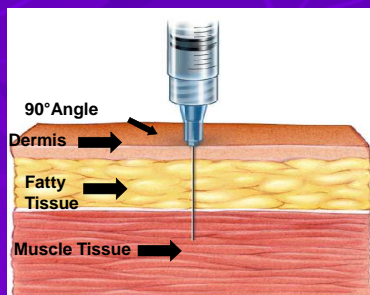
6. Remove the needle from the skin. Direct the needle away from you and others. With the same hand, push very firmly with the thumb on the plunger to activate the needle shield. You will hear a click when the shield extends to cover the needle.



94

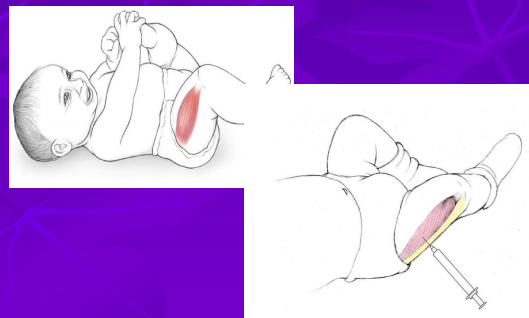
Intramuscular (IM) Tissue

- Site selection depends on:
 - person's age
 - muscle development.
- Use anatomical landmarks to locate site.
- Gauge: 22 to 25.
- Length:
 - Infants (6 through 11 mos): 1 inch
 - Children (1 through 2 years): 1 – 1 ¼ inch.
 - Children and adults (3 years and older): 1 – 1 ½ inch.



95

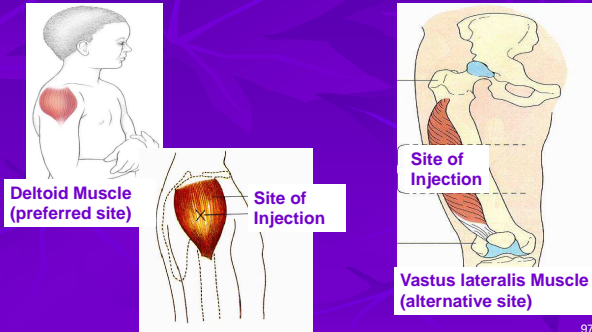
IM Site - Infant



Anterolateral Thigh (vastus lateralis muscle)

96

IM Sites Child/Adolescent/Adult



97

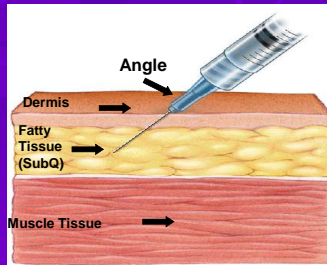
Intramuscular Injection Technique



98

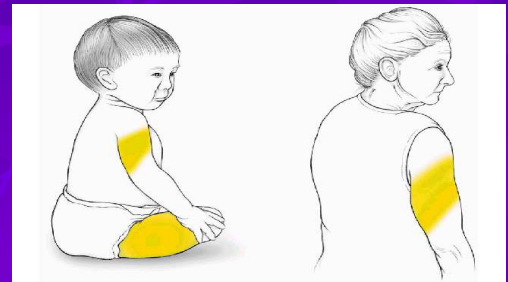
Subcutaneous (SubQ) Tissue

- Injection into the fatty tissue below the dermis and above the muscle.
- Usual sites are thigh and upper outer triceps area of the arm.
- Gauge 23 to 25.
- Length 5/8 inch.
- Needle inserted at a 45° angle.



99

Subcutaneous Sites



100

Subcutaneous Injection Technique



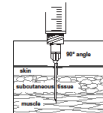
101

How to administer intramuscular, intradermal, and intranasal influenza vaccines

Intramuscular injection Thermostable Inactivated Influenza Vaccine (TIV)

1. Use a needle long enough to reach deep into the muscle. Infants age 6 through 11 use 1-1 1/2 inch; children and adults 3 years and older 1-1 1/2 inch.
2. With your left hand, bunch up the muscle.
3. With your right hand, insert the needle at a 90° angle to the skin with a quick thrust.
4. Push down on the plunger and inject the entire contents of the syringe. There is no need to aspirate.
5. Remove the needle and simultaneously apply pressure to the injection site with a dry cotton ball or gauze. Hold in place for several seconds.
6. If there is any bleeding, cover the injection site with a bandage.
7. Put the used syringe in a sharps container.

*Use the opposite hand if you are left-handed.



Intradermal administration Thermostable Inactivated Influenza Vaccine (TIV)

1. Gently shake the microinjection system before administering the vaccine.
2. Hold the system by placing the thumb and index finger on the finger pads; the index finger should remain free.
3. Insert the needle perpendicular to the skin, in the region of the deltoid, in a short, quick movement.
4. Once the needle has been inserted, maintain light pressure on the surface of the skin and inject using the index finger to push on the plunger. Do not aspirate.
5. Remove the needle from the skin. With the needle directed away from you and others, push very firmly with the thumb on the plunger to activate the needle shield. You will hear a click when the shield extends to cover the needle.
6. Dispose of the applicator in a sharps container.



Intranasal administration Live Attenuated Influenza Vaccine (LAIV)

1. Flutast (LAIV) is for intranasal administration only. Do not inject. Flutast.
2. Remove rubber tip protector. Do not remove dose-divider clip at the other end of the sprayer.
3. With the patient in an upright position (i.e., head not tilted back), place the tip just inside the nostril to ensure LAIV is delivered into the nose. The patient should breathe normally.
4. With a single motion, depress plunger as rapidly as possible until the dose-divider clip prevents you from going further.
5. Push and remove the dose-divider clip from the plunger.
6. Place the tip just inside the other nostril, and with a single motion, depress plunger as rapidly as possible to deliver the remaining vaccine.
7. Dispose of the applicator in a sharps container.




Other Vaccination Administration Issues

- Injection sites in same limb should be separated by at least 1 inch.
- Aspiration is not required.
 - There have been no reports of injury from failure to aspirate.
 - Can result in wastage of vaccine

103

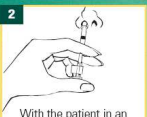
Administration Guidelines

1




Remove rubber tip protector.

2



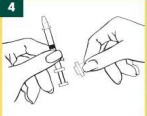
With the patient in an upright position, head tilted back, place the tip just inside the nostril to ensure FluMist is delivered into the nose.

3




With a single motion, depress plunger **as rapidly as possible** until the dose-divider clip prevents you from going further.

4



Pinch and remove dose-divider clip from plunger.

5



Place the tip just inside the other nostril and with a single motion, depress plunger **as rapidly as possible** to deliver remaining vaccine.

FluMist

104

Vaccine Administration Errors Include:

- Wrong Vaccine,
- Wrong Dose,
- Using Expired Vaccine,
- Incorrect Route,
- Timing and Spacing Mistakes.

105

Post-Vaccination

Observe for:

- Syncope,
- Immediate allergic reactions,
- Any adverse reactions or events.

106

Vaccine Adverse Reactions

- Adverse reaction
 - Extraneous effect *caused by vaccine*,
 - Side effect.
- Adverse event
 - Any event following vaccination,
 - May be true adverse reaction,
 - May be only coincidental.


107

Report Adverse Events

VAERS

Vaccine Adverse Events Reporting System

- Established as the U.S. foundation for vaccine safety surveillance in 1990.
- Monitors reports of possible adverse events after immunization.
- Helps detect potential vaccine safety concerns needing further investigation.



108

18

The National Childhood Vaccine Injury Act of 1986

- Mandates that health care providers report certain immunization adverse events to VAERS:
 - Events listed by vaccine manufacturer as a contraindication to subsequent vaccine doses.
 - Events appearing in the reportable events table (available at the VAERS Web site).
- Reporting other types of post-immunization adverse effects is voluntary.

109

Filing a VAERS Report

- What should you report?
 - All significant adverse events that occur after vaccination.
 - Knowing whether a vaccine caused an adverse event can be difficult, so file a report after all events.
- What does it include?

The one page [form](#) asks for:

 - Vaccine information,
 - Adverse event details,
 - Relevant lab and diagnostic data,
 - Patient's medical conditions.
- Is also available [electronically](#) (<https://vaers.hhs.gov/esub/step1>)

110

Medical Emergency Standing Orders

The physician and/or licensed medical personnel should be notified immediately of any medical emergencies

111

Medical Emergency Standing Orders

The following items are in stock for emergencies:

- | | |
|---|--|
| ■ Ammonia Inhalants, | ■ Benadryl for PO and IM, |
| ■ Alcohol Swabs, | ■ Epinephrine, |
| ■ O ₂ mask with tubing and cannulas, | ■ Syringes and needles, |
| ■ O ₂ tank with nipple and flow meter, | ■ AED, |
| ■ Ambu bag, | ■ Copy of Bloodborne Pathogen Exposure Control |
| ■ Pocket face mask with one-way valve, | |

112

Medical Emergency Standing Orders

- Vasovagal Syncope,
- Hemorrhage/Shock,
- Cardiac and or Respiratory Arrest,
- Hyperventilation Syndrome,
- Anaphylaxis.

113

Vasovagal Syncope

- Transient loss of postural tone and consciousness with spontaneous recovery
 - Bradycardia, vasodilation or hypotension resulting in decreased brain perfusion
 - Due to abnormal sympathetic response
- Elicited by a variety of stimuli in settings of fear or emotional distress
- Occurs after medical procedures including vaccination

114

Syncope-Injury

- 76% of serious syncope VAERS reports occurred among adolescents.
- Life-threatening injuries, head trauma, and one fatality have been reported.

115

Preventing Syncope and Injury

- Adolescents and adults should be seated during the vaccination and observation period.
- If weakness, dizziness or loss of consciousness occurs act quickly to prevent injury.

116

Vasovagal Syncope Signs and Symptoms Phase I

- Increased pulse rate,
- Increased blood pressure,
- Increased cardiac output,
- Increased vascular resistance,
- Individual says (s)/he is fine but appears pale and apprehensive.

117

Vasovagal Syncope Signs and Symptoms Phase II

- Decreased pulse rate,
- Decreased blood pressure,
- Decreased cardiac output,
- Decreased vascular resistance,
- Diaphoresis,
- Weakness,
- Lightheadedness /vertigo,
- Loss of consciousness,
- Vomiting,
- Seizures.

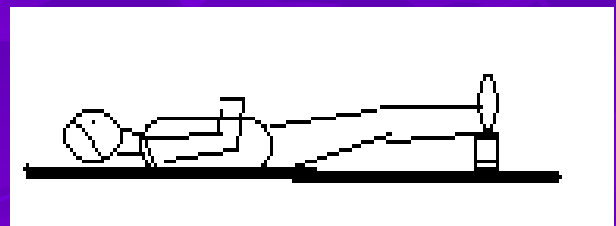
118

Management of Vasovagal Syncope

- Assess and maintain the patient's circulation, airway, and breathing(CABs).
- Place the patient in [shock position I](#).
- Loosen tight clothing.
- Reassure patient and keep comfortably warm.
- Administer ammonia inhalant if necessary.
- Monitor and record vital signs (blood pressure, apical or radial pulse, respirations) until stable.
- Remain with patient until fully recovered.

119

Shock Position I



120

Vasovagal Syncope

Call 911 if:

- Symptoms are not relieved within 5 minutes
- Systolic BP is ≤ 90 mmHg or ≥ 170 mmHg
- Heart rate is ≤ 55 bpm or ≥ 120 bpm.
- Person has a known cardiac condition
- Person c/o chest pain, H/A or palpitations before passing out

While waiting for EMS:

- Continue the above measures.
- Administer oxygen by mask if indicated at 8 L or by nasal cannula at 6 L.
- Monitor and record vital signs (blood pressure, apical or radial pulse, respirations) until stable.
- Remain with the patient and prepare for transportation to the nearest emergency department.

121

Shock

A life threatening condition that is caused by a decrease in BP and tissue perfusion.

Can be caused by:

- Dehydration,
- Sepsis,
- Hemorrhage,
- Myocardial infarction,
- Cardiac tamponade,
- Adrenal failure,
- Trauma,
- Spinal cord injury,
- Anaphylaxis,
- Poisoning,
- Other major insults to the body

122

Shock: Signs and Symptoms

- Restlessness,
- Confusion,
- Yawning,
- Loss of consciousness
- Vomiting,
- Diaphoresis,
- Pallor,
- Change in pulse and/or respirations,
- Hypotension,
- Convulsion

123

Shock: Management

- Notify licensed medical personnel.
- Call 911 immediately.
- Assess and maintain CABs.
- Place in shock position.
- Monitor and record vital signs.
- Loosen tight clothing.
- O₂ via mask @ 8 L, via nasal cannula @ 6L.
- Control bleeding with:
 - Direct pressure
 - Elevation of bleeding site.
 - Can apply a tourniquet*
- Remain with patient and prepare for transfer to hospital.

124

Cardiac/Respiratory Arrest: Signs and Symptoms

- Unresponsiveness,
- Absence of breathing,
- Absence of breathing and absence of palpable carotid pulse.

125

Cardiac/Respiratory Arrest: Management

- Assess unresponsiveness.
- Assess for pulse and respirations.
- Call 911 and obtain AED immediately.
- Assess Circulation Airway and Breathing (C-A-B)
- Initiate rescue breathing if there is a pulse but no breathing.
- Initiate CPR if no breathing or pulse.
- O₂ via mask @ 8L, via nasal cannula @ 6L may use ambu bag.
- Continue CPR or rescue breathing until help arrives or client's own pulse/respiration is re-established.

126

Hyperventilation Syndrome

Hyperventilation is usually manifested by acute anxiety which increases inspiration and expiration of air resulting in carbon dioxide depletion.

127

Hyperventilation Syndrome: Signs and Symptoms

- Diaphoresis,
- Hypotension,
- Tightness in chest,
- Perioral tingling,
- Tingling/spasms of hands or fingers,
- Convulsions (in severe cases),
- Lightheadedness,
- Fainting,
- Feeling of suffocation.

128

Hyperventilation Syndrome: Management

- Notify licensed medical personnel.
- Assess and maintain CABs.
- Reassure and comfort patient.
- Encourage patient to slow breathing.
- Monitor and record vital signs.
- Give O₂ as needed.
- If no improvement within 5 minutes call 911 immediately.
- Remain with patient and prepare for transfer to hospital.

129

Shock Positions



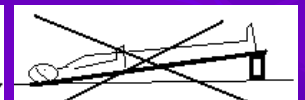
I. Shock Position I



II. Position to Ease Resp.



III. Aspiration Position



IV. Incorrect Shock Position

130

Anaphylaxis

Severe potentially life-threatening allergic reaction that can occur within seconds or minutes of exposure to an allergen.

131

Allergic Reaction/Anaphylaxis Mild Signs and Symptoms

- Mild SOB, able to talk
- Mild urticaria

132

Allergic Reaction/Anaphylaxis Severe Signs and Symptoms

- Generalized (bodywide) itching, erythema (redness) or urticaria (hives) **and/or**
- Angio edema (swelling of face, throat, tongue, lips and/or drooling) **and/or**
- Abdominal cramping
- Respiratory distress (wheezing, stridor, unable to talk, voice change, tightness in throat/chest) **and/or**
- Shock symptoms (tachycardia, hypotension)

133

Allergic Reaction/Anaphylaxis Initial Treatment for Mild and Severe Symptoms

- Call for help - activate the EMS system – Call 911
- Remain with the client
- Initiate basic life support measures:
 - Circulation – ongoing assessment of vital signs
 - Airway – maintain patent airway with client in position of safety/comfort
 - Breathing – give supplemental oxygen via face mask at 8 liters per minute or nasal cannula at 6 liters per minute

134

Allergic Reaction/Anaphylaxis Treatment For Mild Symptoms

- Give liquid PO Diphenhydramine (Benadryl) 12.5mg/5ml per standing orders dosage chart
- If condition worsens use treatment for severe symptoms.

135

Allergic Reaction/Anaphylaxis Treatment For Severe Symptoms

- Give IM Epinephrine (Adrenaline Chloride) refer to dosage chart **client must remain supine after epi**
- If EMS has not arrived, and symptoms are still present, repeat epinephrine at 5 -15 minute intervals for up to 3 doses depending on response.
AND
- If able to swallow, give liquid PO Diphenhydramine (Benadryl 12.5 mg /5ml) refer to dosage chart.
OR
- If not able to swallow, give IM Diphenhydramine (Benadryl 50 mg/ml):

136

Allergic Reaction/Anaphylaxis Documentation

- Record actions and drugs on Emergency Summary Sheet.
- Send one copy of Summary Sheet and all personal belongings with client.
- Give one copy of Summary Sheet to Clinic Manager, and one copy to Nursing Director.
- Retain original Summary Sheet for DPH record.

137

Bloodborne Pathogens Policy DPH PM #27

Universal Precautions:

All blood and body fluid is treated as if it is infected with bloodborne pathogens.

138

Bloodborne Pathogens Policy DPH PM #27

Work Practice Controls

- Handwashing
Wash hands immediately after removing PPE or becoming contaminated with blood or body fluids. Can use waterless hand cleaner when handwashing is not feasible.
- Eating, drinking, applying lip balm and handling contact lenses prohibited in work areas where they may become contaminated.

139

Bloodborne Pathogens Policy DPH PM #27

Work Practice Controls (cont.)

- No food/drink in refrigerators or areas where blood or infectious material is present.
- Procedures are performed to minimize exposure to blood and body fluids.
- No mouth pipetting.
- No recapping or handling used needles.

140

Bloodborne Pathogens Exposure

What do I do if I am exposed?

- Immediately cleanse the exposure site with soap and water.
- Report exposure to your supervisor.
- Identify if possible the source client.

141

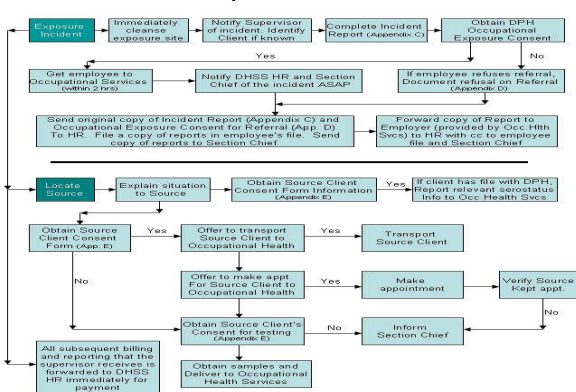
Bloodborne Pathogens Policy DPH PM #27

Supervisors responsibility for exposures

- Complete an injury/illness report.
- Obtain consent from employee for referral to Bayhealth/Christiana Care Health Services Occupational Health, then call in referral.
- Send employee to Occupational Health within 2 hours of exposure for best results (provide transportation if needed).
- Notify DHSS HR and section chief of incident.
- Determine infection status of source client.
- If source client is unknown report this to OHS.

142

Bloodborne Exposure Procedural Flow Chart



QUESTIONS?

144